

REMARKS/ARGUMENTS

Reconsideration of the application is requested.

Claims 11-12, 14-15 and 24-31 remain in the application. The remaining claims were previously canceled.

In "Claim Rejections - 35 USC § 103", item 2 on pages 2-3 of the above-identified Office Action, claims 11-12, 14-15 and 24-31 have been rejected as being obvious over U.S. Patent No. 4,666,744 to DeLuca et al. (hereinafter DeLuca), under 35 U.S.C. § 103(a).

As will be explained below, it is believed that the claims were patentable over the cited art in their original form and, therefore, the claims have not been amended to overcome the references.

Before discussing the prior art in detail, it is believed that a brief review of the invention as claimed, would be helpful.

Independent claim 11 calls for, *inter alia*, a component, which comprises:

a substrate;

a lower insulating layer having a layer thickness between 0.05 μm and 50 μm and having a region;

at least one upper insulating layer having a layer thickness between 0.05 μm and 50 μm and having a region; and

at least one activated region ... being [a] region of said lower insulating layer [or] of said at least one upper insulating layer, said activated region therefore being an activated insulating layer.

Independent claim 24 calls for, *inter alia*, a process for producing a component, which comprises:

applying a lower insulating layer having a layer thickness between 0.05 μm and 50 μm to a substrate;

selectively activating at least one region of the lower insulating layer ... for forming an activated region ... of the lower insulating layer; and

applying at least one upper insulating layer having a layer thickness between 0.05 μm and 50 μm ... to the lower, activated insulating layer.

Independent claim 27 calls for, *inter alia*, a process for producing a component, which comprises:

applying a first insulating layer having a layer thickness between 0.05 μm and 50 μm to a substrate;

applying a second insulating layer having a layer thickness between 0.05 μm and 50 μm ; and

selectively activating ... the first insulating layer ... [or] the second insulating layer ... for forming an activated insulating layer, the activating step includes the step of selectively modifying a region or a surface of the activated insulating layer.

Thus, it is seen that each of the independent claims 11, 24 and 27 of the instant application calls for two insulating

layers having a thickness between 0.05 μ m and 50 μ m; and one of the insulating layers having an activated region or surface.

The DeLuca reference discloses, in the section entitled Description of the Prior Art, specifically at column 2, lines 31-34 thereof, a method by which a ceramic substrate is coated on both sides with a metal layer, wherein the metal layers on both sides of the ceramic substrate can be connected with each other by a hole. In order to prevent the metal layer from forming blisters, the ceramic substrate is activated by a layer of molten alkali metal. A metal layer is subsequently formed on that alkali metal layer by chemical electroless deposition. No insulating layer is applied onto a substrate according to the method of DeLuca. In fact, there is only one mention of the word "insulating" in DeLuca, and that is in the Description of the Prior Art.

In contrast to DeLuca, it is the object of the present invention to provide a component and a flexible process for producing a component which has a thin insulator layer and a metallization layer. On one hand, the insulator layer is thin. On the other hand, however, the thinness of the insulator layer does not cause a deterioration of the component characteristics, such as the effect on low-stress

behavior, photosensitivity, or permeability of water vapor, oxygen or metal diffusion.

This object of the invention of the instant application is achieved by forming a second insulator layer after the application of a first insulator layer. The present invention thus makes it possible to compensate for physical weaknesses of an insulator layer with another insulator layer. In addition, an area of an insulator layer is selectively activated for surface functionalization, for instance, a metallization, a photosensitization and/or a hydrophobicization.

According to the method of DeLuca et al., however, two insulator layers are not applied onto a substrate. According to the method described in DeLuca, not a single insulator layer is formed, but instead the metallization is performed directly on the ceramic substrate. Consequently, one of skill in the art could not obtain any hint from the teachings of DeLuca that a second insulator layer should be used to compensate for the physical weaknesses of a first insulator layer, as is taught by the invention of the instant application.

The passage cited by the Examiner regarding a multi-layering configuration with several dielectric layers refers to a different technical field, that is the field of so-called thick layer systems. Once again, it is noted that the portion of DeLuca mentioned by the Examiner, that is column 2, lines 11-34, is part of the Description of the Prior Art and is mentioned to distinguish DeLuca over a thick film multilayer process. DeLuca seeks to show the differences between DeLuca's method of metallizing a substrate directly and thick film technology. Thus, DeLuca teaches a person of skill in the art away from a combination of thick film technology and metallizing directly on a substrate in column 2, lines 31-34 thereof.

Furthermore, contrary to the invention of the instant application, DeLuca does not describe a method in which an insulator layer formed on a substrate is activated. Instead, according to DeLuca, the substrate which is metallized on both sides, is immediately activated. Even if a person of skill in the art were to form one or two insulator layers on the ceramic substrate, despite the fact that DeLuca teaches away from a combination of DeLuca's method of metallizing a substrate directly and thick film technology, as described above, he or she would not obtain a hint from DeLuca that one of these insulator layers could be activated, since the

insulator layers are not activated according to the thick layer systems described in DeLuca.

In addition, the Examiner has stated that she considers the thicknesses mentioned in the claims to be a matter of design choice. However, it is noted that the thinness of the insulating layers does not cause a deterioration of the component characteristics, such as the effect on low-stress behavior, photosensitivity, or permeability of water vapor, oxygen or metal diffusion, because a second insulator layer is formed after the application of a first insulator layer, which makes it possible to compensate for physical weaknesses of one insulator layer by using another insulator layer. Such a deterioration would occur with such thin layers if the two layers according to the present application were not used.

Clearly, DeLuca does not show two insulating layers having a thickness between $0.05\mu\text{m}$ and $50\mu\text{m}$ and one of the insulating layers having an activated region or surface, as recited in claims 11, 24 and 27 of the instant application.

Instead, DeLuca discusses thick film systems and states that his system is different from such thick film systems because he applies a metallization directly on a substrate. The invention of the instant application as claimed relates to

neither thick film systems nor metallization directly on a substrate, which is all that is found in DeLuca.

It is accordingly believed to be clear that none of the references, whether taken alone or in any combination, either show or suggest the features of claims 11, 24 or 27. Claims 11, 24 and 27 are, therefore, believed to be patentable over the art. The dependent claims are believed to be patentable as well because they all are ultimately dependent on one claims 11, 24 and 27.

In view of the foregoing, reconsideration and allowance of claims 11-12, 14-15 and 24-31 are solicited.

In the event the Examiner should still find any of the claims to be unpatentable, counsel would appreciate receiving a telephone call so that, if possible, patentable language can be worked out.

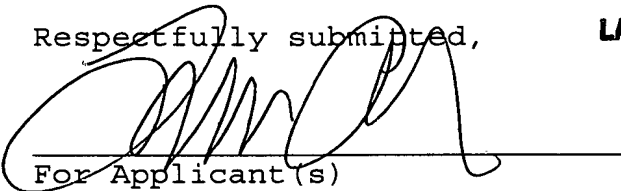
Petition for extension is herewith made. The extension fee for response within a period of three months pursuant to Section 1.136(a) in the amount of \$980.00 in accordance with Section 1.17 is enclosed herewith.

Appl. No. 09/817,967
Amdt. dated October 20, 2004
Reply to Office action of April 21, 2004

Please charge any other fees that might be due with respect to
Sections 1.16 and 1.17 to the Deposit Account of Lerner and
Greenberg, P.A., No. 12-1099.

Respectfully submitted,

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For Applicant(s)

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